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WHAT IS CLAIMED IS:

1. A liquid crystal display apparatus,
comprising:

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5 a liquid crystal element including a front
substrate positioned on the side of an observer and
having a first electrode mounted to one surface, a rear
substrate having a second electrode arranged to face
said first electrode, and a liquid crystal layer
interposed between these substrates, said liquid
10 crystal layer controlling the polarized state of the
transmitted light in accordance with the electric field
applied between the first and the second electrodes;

15 a first reflection polarizing plate arranged on
the front side of the liquid crystal element and
reflecting the light of one of the two polarized
components of the incident light, said two polarized
components being perpendicular to each other, and
transmitting the light of the other polarized
component; and

20 a rear member arranged behind the liquid crystal
element and reflecting at least a part of the light
transmitted through the liquid crystal element.

25 2. The liquid crystal display apparatus according
to claim 1, further comprising diffusion means arranged
on the front surface of said reflection polarizing
plate for diffusing the light reflected from said
reflection polarizing plate.

3. The liquid crystal display apparatus according to claim 1, further comprising a diffusion layer arranged between said liquid crystal element and said reflection polarizing plate arranged on the front side of said liquid crystal element and/or between said liquid crystal element and a rear member arranged on the rear side of the liquid crystal element.

4. The liquid crystal display apparatus according to claim 3, wherein said diffusion layer includes a lens film having micro lenses arranged on one surface.

5. The liquid crystal display apparatus according to claim 1, wherein said rear member includes at least one second reflection polarizing plate.

6. The liquid crystal display apparatus according to claim 5, wherein:

said liquid crystal layer has an initial aligning state of the liquid crystal molecules which are aligned in a twist-alignment with a twisting angle of about 90° ;

said first reflection polarizing plate is arranged such that the transmission axis thereof is substantially parallel or substantially perpendicular to the aligning direction of the liquid crystal molecules in the vicinity of the front substrate of said liquid crystal element; and

said second reflection polarizing plate is arranged such that the transmission axis thereof is

substantially parallel or substantially perpendicular to the transmission axis of said first reflection polarizing plate.

5 7. The liquid crystal display apparatus according to claim 5, further comprising a back light arranged on the rear side of said rear member for emitting an illuminating light.

10 8. The liquid crystal display apparatus according to claim 1, wherein said rear member comprises a second reflection polarizing plate that reflects the light one of the two polarized components, which are perpendicular to each other, of the incident light and transmits the light of the other polarized component, and light absorption means arranged on the rear side of
15 said second reflection polarizing plate.

9. The liquid crystal display apparatus according to claim 8, wherein said light absorbing means has a light absorbing film.

20 10. The liquid crystal display apparatus according to claim 8, wherein said light absorption means has an absorption polarizing plate that absorbs the light of one of the two polarized components, which are perpendicular to each other, of the incident light, and transmits the light of the other polarized component.

25 11. The liquid crystal display apparatus according to claim 1, wherein said rear member has an absorption polarizing plate absorbing the light of one of the two

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polarized components, which are perpendicular to each other, of the incident light and transmitting the light of the other polarized component, and a reflection plate arranged on the rear side of the absorption polarizing plate.

12. The liquid crystal display apparatus according to claim 1, further comprising an optical element arranged on the front side of said first reflection polarizing plate for permitting the light incident from the front side to be transmitted therethrough so as to be incident on said reflection polarizing plate and also permitting the light of said one polarized component reflected from said reflection polarizing plate to be incident again on said reflection polarizing plate with the polarized state changed.

13. The liquid crystal display apparatus according to claim 12, wherein said optical element has a transparent film transmitting the incident light from the front side to be incident on the first reflection polarizing plate and subjecting the light reflected from said reflection polarizing plate to the inner surface reflection so as to permit the light to be incident again on said reflection polarizing plate.

14. The liquid crystal display apparatus according to claim 12, wherein said optical element has a retardation plate imparting a phase difference between the normal light and the abnormal light of the

transmitted light so as to change the polarized state of the transmitted light.

15. The liquid crystal display apparatus according to claim 14, wherein said retardation plate has a
5 quarter wavelength plate imparting a phase difference of 1/4 wavelength between the normal light and the abnormal light of the transmitted light.

16. The liquid crystal display apparatus according to claim 15, wherein said quarter wavelength plate is
10 arranged such that the retarded phase axis thereof crosses the reflection axis and the transmission axis of the reflection polarizing plate arranged on the front side of the liquid crystal element with a crossing angle of about 45°.

15 17. The liquid crystal display apparatus according to claim 12, wherein a surface treatment is applied to the front surface of said first reflection polarizing plate to permit the light of one polarized component to be incident on the optical element arranged on the
20 front side of the reflection polarizing plate at an angle of incidence at which the light is subjected to the inner surface reflection by the optical element.

18. The liquid crystal display apparatus according to claim 12, wherein a surface treatment is applied to
25 the front surface of said first reflection polarizing plate to permit the light of one polarized component to be diffused and to permit the light of the other

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polarized component to be transmitted without being diffused.

19. The liquid crystal display apparatus according to claim 12, further comprising a diffusion layer
5 arranged between the first reflection polarizing plate and the optical element arranged on the front side of the reflection polarizing plate so as to diffuse the transmitted light within a predetermined expanding angular range.

20. The liquid crystal display apparatus according to claim 19, wherein said diffusion layer has a directivity in a direction inclined from a line normal to the first reflection polarizing plate.

21. The liquid crystal display apparatus according to claim 12, further comprising diffusing means
15 arranged between the liquid crystal element and the first reflection polarizing plate arranged on the front side of the liquid crystal element for diffusing the transmitted light.

22. The liquid crystal display apparatus according to claim 12, wherein said rear member includes a second reflection polarizing plate reflecting the light of one of the two polarized components, which are
20 perpendicular to each other, of the incident light and transmitting the light of the other polarized component.

23. The liquid crystal display apparatus according to claim 22, further comprising a back light arranged

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on the rear side of said rear member, transmitting the incident light from the front side, and emitting an illuminating light toward the front side.

24. The liquid crystal display apparatus according to claim 12, wherein said rear member has means for reflecting the light of one of the two polarized components, which are perpendicular to each other, of the incident light and absorbing the light of the other polarized component.

25. The liquid crystal display apparatus according to claim 24, wherein said rear member comprises a second reflection polarizing plate reflecting the light of one of the two polarized components, which are perpendicular to each other, of the incident light and transmitting the light of the other polarized component, and light absorption means arranged on the rear side of said second reflection polarizing plate.

26. The liquid crystal display apparatus according to claim 25, wherein said light absorption means has an absorption polarizing plate transmitting the light of one of the two polarized components, which are perpendicular to each other, of the incident light and absorbing the light of the other polarized component.

27. The liquid crystal display apparatus according to claim 25, wherein said light absorption means has a colored film absorbing the light having a predetermined wavelength band.

28. The liquid crystal display apparatus according to claim 12, wherein said rear member has a reflection film.

29. The liquid crystal display apparatus according to claim 12, wherein said rear member has an absorption polarizing plate transmitting the light of one of the two polarized components, which are perpendicular to each other, of the incident light and absorbing the light of the other polarized component, and a reflection plate arranged on the rear side of the absorption polarizing plate.

30. The liquid crystal display apparatus according to claim 29, wherein said rear member has a back light arranged between said absorption polarizing plate and said reflection means, transmitting the incident light from the front side and the reflected light from the reflection film, and emitting an illuminating light toward the front side.

31. The liquid crystal display apparatus according to claim 12, wherein said rear member has a second reflection polarizing plate arranged on the rear side of the liquid crystal element, a third reflection polarizing plate arranged on the rear side of said second reflection polarizing plate, a diffusion layer arranged between said second and third reflection polarizing plates and diffusing the transmitted light, and light absorbing means arranged on the rear side of

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said third reflection polarizing plate.

32. The liquid crystal display apparatus according to claim 12, further comprising diffusion means arranged between the liquid crystal element and said rear member for diffusing the transmitted light.

33. The liquid crystal display apparatus according to claim 32, wherein said diffusion means has a directivity in a direction parallel to a line normal to the reflection polarizing plate arranged on the front side of the liquid crystal element.

34. The liquid crystal display apparatus according to claim 33, wherein said diffusion means includes a lens film having micro lenses arranged on one surface.

35. The liquid crystal display apparatus according to claim 12, wherein said rear member has diffusion-reflection properties.

36. The liquid crystal display apparatus according to claim 12, wherein said liquid crystal element is a simple matrix liquid crystal element in which liquid crystal molecules are twist-aligned with a twisting angle of about 100° .

37. The liquid crystal display apparatus according to claim 36, wherein said liquid crystal element has a liquid crystal layer in which the product Δn and between the refractive index anisotropy Δn of the liquid crystal and the thickness d of the liquid crystal layer falls within a range of between 115 nm and 130 nm.

38. The liquid crystal display apparatus according to claim 1, wherein said liquid crystal element has a liquid crystal layer in which liquid crystal molecules are twist-aligned with a twisting angle of 180° to 270° between the front and rear substrates.

39. The liquid crystal display apparatus according to claim 38, further comprising a transparent film arranged on the front side of said first reflection polarizing plate for subjecting the light reflected from the first reflection polarizing film to the inner surface reflection so as to be incident again on said reflection polarizing plate.

40. The liquid crystal display apparatus according to claim 38, wherein said transparent film exhibits optical characteristics of changing the polarized state of the transmitted light.

41. The liquid crystal display apparatus according to claim 40, wherein said transparent film includes a quarter wavelength plate imparting a phase difference of $1/4$ wavelength between the normal light and the abnormal light of the transmitted light.

42. The liquid crystal display apparatus according to claim 41, wherein said quarter wavelength plate is arranged such that the retarded phase axis thereof crosses the transmission axis of the reflection polarizing plate arranged on the front side of the liquid crystal element with a crossing angle of about

45° .

43. The liquid crystal display apparatus according to claim 40, further comprising diffusion means arranged on the front side of the first reflection polarizing plate for diffusing the light reflected from the reflection polarizing plate.

44. The liquid crystal display apparatus according to claim 38, further comprising an absorption polarizing plate arranged between the liquid crystal element and the first reflection polarizing plate such that the transmission axis of said absorption polarizing plate is substantially parallel to the transmission axis of the reflection polarizing plate, and having a transmission axis transmitting one of the two polarized components, which are perpendicular to each other, of the incident light and an absorption axis absorbing the light of the other polarized component.

45. The liquid crystal display apparatus according to claim 38, further comprising a diffusion layer arranged between the liquid crystal element and the first reflection polarizing plate and/or between the liquid crystal element and the reflection means arranged on the rear side of the liquid crystal element.

46. The liquid crystal display apparatus according to claim 38, wherein said rear member includes a second reflection polarizing plate reflecting the light of one

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of two polarized components, which are perpendicular to each other, of the incident light and transmitting the light of the other polarized component.

5 47. The liquid crystal display apparatus according to claim 38, wherein said rear member includes an absorption polarizing plate absorbing the light of one of two polarized components, which are perpendicular to each other, of the incident light and transmitting the light of the other polarized component.

10 48. The liquid crystal display apparatus according to claim 38, wherein said rear member includes a reflection film.

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